

Acanthopharynx affinis Marion, 1870
(NEMATODA: CHROMADORIDA: DESMODORIDAE),
A NEW RECORD OF THE ATLANTIC OCEAN

Rodrigo Riera^{1*}, Jorge Núñez² & María del Carmen Brito²

¹ Centro de Investigaciones Medioambientales del Atlántico (CIMA SL)
Arzobispo Elías Yanes, 44, 38206 La Laguna, Tenerife, Canary Islands, Spain

² Benthos Lab, Department of Animal Biology, Faculty of Biology
University of La Laguna, 38206 La Laguna, Tenerife, Canary Islands, Spain

*corresponding author: rodrigo@cimacanarias.com

RESUMEN

Se recolecta por primera vez para el océano Atlántico la especie de nematodo *Acanthopharynx affinis* Marion 1870, anteriormente recolectada en el mar Mediterráneo. Se realiza una descripción de la especie, y se detallan las medidas de los caracteres taxonómicos más importantes. Además, se muestran datos sobre los factores sedimentarios de la localidad de estudio.

Palabras clave: Nematoda, Desmodoridae, *Acanthopharynx*, vida libre, Tenerife, islas Canarias.

ABSTRACT

The nematode species *Acanthopharynx affinis* Marion 1870 is collected for the first time in the Atlantic Ocean, formerly only recorded in the Mediterranean Sea. A description and measurements of the most important taxonomical characters are presented. Furthermore, abiotic data of the sampling station are reported.

Key words: Nematoda, Desmodoridae, *Acanthopharynx*, free-living, Tenerife, Canary Islands.

1. INTRODUCTION

The genus *Acanthopharynx* Marion, 1870 is characterized by having a set off head and developed cephalic capsule. 4 outer labial setae located at the median region of the head, sometimes at the same level as cephalic ones. Amphids situated in the cephalic capsule. Pre-cloacal supplements tubular. Males with one reflexed testis and females with two reflexed ovaries. This genus resembles *Desmodora*, however, oesophageal bulb is very long, almost half length of oesophagus in *Acanthopharynx* (Platt & Warwick [3]). The most important tax-

onomic characters of this genus are (i) pre- and postamphidial setae, (ii) amphid size, (iii) presence or not of supplements and postanal papillae (Wieser [6]).

Up to now, the genus *Acanthopharynx* Marion, 1870 comprises 12 species: *A. affinis* Marion, 1870, *A. brachycapitata* (Allgen, 1947), *A. denticulata* Wieser, 1954, *A. japonica* Steiner & Hoeppli, 1926, *A. merostomacha* (Steiner, 1921), *A. micans* (Eberth, 1873), *A. micramphis* Stekhoven, 1942, *A. nuda* (Cobb, 1920), *A. perarmata* Marion, 1870, *A. rigida* Stekhoven, 1950, *A. setosissima* Stekhoven, 1943 and *A. similis* (Allgen, 1932).

2. MATERIAL AND METHODS

Samples were collected in the intertidal and shallow subtidal soft-bottoms of Los Abrigos (SE Tenerife) and Los Cristianos (SW Tenerife). PVC cores of 4.5 cm of inner diameter were taken to a depth of 30 cm in the sediment. These samples were fixed with 10% formaldehyde in seawater for one day and decanted through a sieve of 63 mm mesh size, and posteriorly preserved in 70% ethanol. Specimens were mounted in jelly glycerine gel and drawings of these were done using a camera lucida on a Leica DMLB microscope equipped with Nomarski interference contrast. All measurements are in micrometers and curves structures are measured along the arc.

Abbreviations used in the text are: a, body length divided by maximum body diameter; b, body length divided by pharyngeal length; c, body length divided by tail length; c', tail length divided by anal body diameter; cbd, corresponding body diameter; m, male; s', spicule length divided by anal body diameter; %V, position of vulva as a percentage of body length from anterior.

3. SYSTEMATICS

CHROMADORIDA Chitwood, 1933

CHROMADORINA Filipjev, 1928

DESMODORIDAE Filipjev, 1922

Acanthopharynx Marion, 1870

Acanthopharynx affinis Marion, 1870

(Fig. 1, Tab. 1)

Acanthopharynx affinis Marion [1]: 36-37, pl. K, fig. 4-4b; Schuumars-Stekhoven [4]: 243, fig. 13a-c; Palacín [2]: 33, fig. 2e-f.

Meristic data and studied material.- Abrigos intertidal: november 2000, 1 male (m1); Cristianos intertidal: august 2000, 1 male (m2); Cristianos subtidal: october 2000, 1 male (m3).

Description.-

Male: Body slender and tapering towards both ends. Head slightly round, not set off and cephalic capsule evident. Cuticle with fine transversal striations, lateral differentiation absent. Amphids are 25% of the cbd, unispiral, located at 5 μ m from anterior end. Buccal cavity small, with one noticeable dorsal tooth. Inner labial setae absent. Outer labial and cephalic setae equal, 0.3 cephalic diameters long, very numerous (20-30). These setae are situated at

the same level and located in the median part of the head capsule. Subcephalic setae 4-7 μm long, situated at 6-12 μm from the body anterior end. Pharynx slender and cylindrical. Oesophageal bulb very long. Ventral gland and nerve ring not seen.

The reproductive system is monorchic with one reflexed testis. Spicules are 1 anal diameter long, paired and arcuated, with a capitulum. Gubernaculum 0.4 anal diameters long, small and without apophysis. 9-14 tubular precloacal supplements. Tail 1.5 anal diameters long, short and conical with truncated posterior tip. Caudal setae lacking. Spinneret inconspicuous.

Discussion.- The different species belonging to the genus *Acanthopharynx* can only be distinguished after subtle taxonomic characters, since they resemble each other very much (Schuurmas-Stekhoven [5]). However, canarian specimens fit well with mediterranean individuals (Palacín [2]) though several differences can be discerned between them. The

spicules in canarian specimens are less developed than mediterranean individuals, as well as, the development of the capitulum (anterior end of the spicules). Gubernaculum is slender in canarian specimens and almost triangular in mediterranean individuals. However, the former differences could be partially due to a bad fixation of individuals in gelly glycerine. Moreover, mediterranean specimens are larger than canarian (2.45-2.93 vs 1.44-2.03 mm), thus, there are differences in De Man indexes between both groups.

Ecology.- In Los Abrigos intertidal this species was collected in well sorted medium grained sands with an organic matter content of 0.88% and 4.44% of carbonates. In Los Cristianos intertidal this species was collected in well sorted fine grained sands with an organic matter content of 0.39% and 25.13% of carbonates. In the subtidal of this location, this species was recorded in well sorted fine grained sands with an organic matter content of 0.64% and 25.30% of carbonates.

Distribution.- Mediterranean Sea (Marion [1], Schuurmas-Stekhoven [4], Palacín [2]). This species is first recorded in the Atlantic Ocean.

	m1	m2	m3
Total body length	1442.9	2028.6	1800
a	23.9	31.6	25.2
b	6.3	7.1	7.5
c	22.9	21.8	20.3
Cephalic diameter	25.9	35.7	30
Inner labial setae	31	35.7	40
Outer labial setae	–	–	–
Cephalic setae	7.1	7.1	7.1
Subcephalic setae	7	8.6	10
Buccal cavity diameter	4	6.4	7.1
Amphid diameter	5.7	12.9	10
Amphid height	8.6	8	8
Amphid from anterior	4.3	3	4
Pharynx length	5.7	7	8
Pharynx cbd	228.6	285.7	239.3
Maximum body diameter	57.1	60.7	60.7
Vulva from anterior	60.3	64.3	71.4
% V			
Spicule length	43	58.2	50.2
Gubernaculum length	24.3	18.6	35.7
s'	1	1.4	1.1
Tail length	63	92.9	88.6
Anal body diameter	41	60.7	53.6
c'	1.5	1.5	1.6
Spicule length/Tail length	0.7	0.9	0.7

Table 1.- Measurements of *Acanthopharynx affinis* Marion, 1870 in μm .

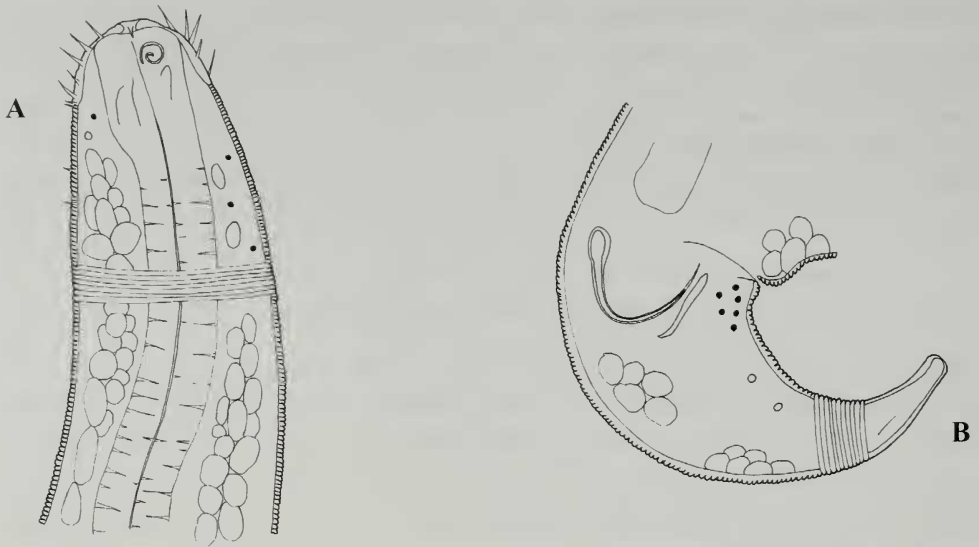


Figure 1.- *Acanthopharynx affinis* Marion, 1870. Male. A. Anterior end. B. Posterior end. Scale = 30 μ m.

4. ACKNOWLEDGEMENTS

The first author (R.R.) thanks P.J. Somerfield (Plymouth Marine Laboratory, UK) for taxonomic advice during the beginning of his research on free-living marine nematodes. Authors also acknowledge Dr. Catalina Pastor de Ward (Centro Nacional Patagónico, Argentina) for interchange of ideas.

5. REFERENCES

- [1] MARION, A.F: 1870. Addition aux recherches sur les nématoides libres du golf de Marseille. *Ann. Sci. Nat.* 14(1): 1-16.
- [2] PALACÍN, C. 1985. Nematodos marinos de las algas fotófilas del litoral de Menorca II. Chromadorida y Monhysterida. *Misc. Zool.*, 9: 31-48.
- [3] PLATT, H.M. & R.M. WARWICK. 1988. *Free-living marine nematodes. Part II. British Chromadorids*. Synopses of the British Fauna n°38: 1-502.
- [4] SCHUUMARS-STEKHOVEN, J.H. 1942. The free-living marine nematodes of the Mediterranean. II. The Balearic Islands. *Zoologische Mededelingen*, 23: 229-262.
- [5] SCHUUMARS-STEKHOVEN, J.H. 1950. The free-living marine nemas of the Mediterranean. I. The Bay of Villefranche. *Mém. Inst. R. Sci. Nat. Belg.* 2 Ser(17): 1-220.
- [6] WIESER, W. 1954. Free-living marine nematodes. II. Chromadoroidea. *Acta. Univ. Lund.*, 50(16): 1-148.